

NOTES ON NEW SOUTH WALES AND QUEENSLAND ORCHIDS.

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(Two Text-figures.)

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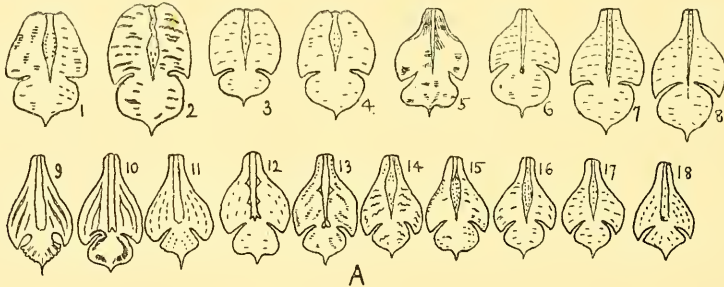
A. Relations between certain forms of Dendrobium.

For some years past botanists and orchid-fanciers alike have been puzzled over the relations between *Dendrobium speciosum* Sm., *D. gracilicaule* F.v.M., *D. Kingianum* Bidw., and certain allied forms which vary considerably, at times being sufficiently distinct to give the impression of independent species, and at times apparently justifying the opinion that they are merely intermediates due to hybridization between the above-mentioned species. These forms are at present known as *D. delicatum* Bail., *D. Kestevenii* Rupp, *D. speciosum* var. *nitidum* Bail., and *D. speciosum* var. *gracillimum* Rupp. It seemed worth while to try and clear up this confusion and, though I can scarcely claim to have done this, the results of my examination of a large number of specimens from various sources may at least serve to simplify the problem for all who are studying it. The difficulties have been intensified by the fact that the late F. M. Bailey apparently left no herbarium types of *D. delicatum* and *D. speciosum* var. *nitidum*, and consequently these names have been bestowed upon different forms without justification: e.g., white-flowering forms of *D. Kingianum* have passed for *D. delicatum*. In 1931, Mr. C. T. White, the Queensland Government Botanist, sent me the Brisbane Herbarium specimens labelled *D. speciosum* var. *nitidum*, and with one exception I found the flowering specimens identical with a form to which several years ago I gave the name var. *gracillimum*. The exception came from Tambourine Mountain, and in September, 1932, Mrs. H. Curtis sent me abundant living material from that locality. I found this form to be quite distinct from var. *gracillimum*, and it appears to me to conform in every respect to Bailey's description of var. *nitidum*. In my opinion this should rank as a species. The stem is still more slender than that of var. *gracillimum*, but the flowers are much larger, and pure white except for faint markings on the labellum. The latter is of very thin texture, quite distinct in form (Text-fig. A, 8) from that of *D. speciosum* (Text-fig. A, 1, 2), and the sinus between each lateral lobe and the mid-lobe is so deep that the latter easily breaks off in handling unless one is careful.

D. speciosum var. *gracillimum* was described and discussed in These PROCEEDINGS, liv, pt. 5, 1929. I agree with those who feel the great dissimilarity in appearance between this and other forms of *D. speciosum* to be a stumbling-block in the way of accepting it as a mere variety. I pointed out that the flowers, however, in the typical form of the variety, are indistinguishable from those of some of the small-flowered robust *D. speciosum*, and this fact, which is corroborated by other workers, seems to debar it from specific rank. It has been conjectured that var. *gracillimum* originated by hybridization between *D. speciosum* and

D. gracilicaule. The general appearance of the plant favours this theory, and Mr. A. G. Hamilton, of Chatswood, has a plant with heavily-spotted or blotched flowers—even the labellum (Text-fig. A, 5). Mr. Hamilton's flowers, however, are exceptional, and the form of the labellum is very peculiar. It will be seen (Text-fig. A, 4-7) that the labellum of this orchid is subject to considerable variation: No. 7 belongs to a flower of which specimens were sent independently by Messrs. E. Slater of Bullahdelah, and R. Leaney of Chatswood, under the name "cream-flowered *D. Kestevenii*". It is, however, quite unlike the *D. Kestevenii* labellum, and the whole flower agrees with *gracillimum*, though the stems are shorter and somewhat sturdier than the type.

D. delicatum Bail. remains, for practical purposes, an unknown quantity. Mr. F. A. Weinthal, of Chatswood, sent me a plant obtained in Southern Queensland some years ago, which he believes to be Bailey's species. The labellum is shown in Text-figure A, 12. No. 11 is from a plant in the bush-house of Mrs. C. A. Messmer, Lindfield. Mr. Weinthal's plant is of a more robust type: the flowers are not unlike, but the two labella are very different. No. 10 is from Mrs. G. Annand, Lismore, labelled "white *Kingianum*", but the plant seems to me too robust and hard of texture for that species. No. 9 (Mrs. Messmer) is a typical *D. Kingianum*, but the species has many varieties. It can scarcely be doubted that 10 and 11 show close affinities with 9: this is by no means so obvious with 12, which seems nearer to the series following. Nos. 13 to 18 are all from



Text-fig. A.—Labella of certain forms of *Dendrobium* in New South Wales and Queensland. 1. *D. speciosum* Sm., a small-flowered form; 2. *D. speciosum*, a large-flowered form; 3. *D. gracilicaule* F.v.M.; 4, 5, 6, 7. *D. speciosum* var. *gracillimum* Rupp; 8. *D. speciosum* var. *nitidum* Bail.; 9. *D. Kingianum* Bidw.; 10. *D. Kingianum* ?; 11. *D. delicatum* Bail. ?; 12. *D. delicatum* ?; 13 to 18. *D. Kestevenii* Rupp.

plants supposed to be *D. Kestevenii*. We may call 13 the type, since it is from the plant originally sent to me from Bullahdelah by Dr. H. L. Kesteven, after whom I named it. Nos. 14, 15, and 16 are from Mr. F. Fieldsend, of East Maitland: 17 is from Mr. E. Slater, and 18 from Mr. R. Leaney. All the plants originally came from Bullahdelah. Even if No. 12 should prove to be the genuine *D. delicatum* of Bailey, it is not quite identical with any of those known as *D. Kestevenii*: and the stems or pseudobulbs are smoother and more slender. But the affinities are so close and so obvious that my present view of the problem is, that it will be found advisable to unite these two to constitute a single species. They cannot justly be included under either *D. speciosum* or *D. Kingianum*, but they do appear to come between those species. Further study, however, is desirable before such

a step is taken. I am frankly puzzled by Nos. 10 and 11, but in view of the unmistakable "*Kingianum* influence" in the labella, I should class them in that species until we have further working data.

Note on Text-figure A.—It will be seen that the labella differ so much in detail that they are not safe guides even to a particular species. It is of interest to observe the varying characteristics of the median line, which may prove of some value in tracing affinities. Thus if we take 1, 3, and 4, we find a general resemblance in outline, and the forms of the median line are identical. No. 12 is very peculiar: the median line ends in three teeth, and has two triangular wings on each side. In 13 it has one such wing on each side, and ends in two curious flaps. In 10 it ends in two teeth. No. 2 is the labellum of a very beautiful *D. speciosum* sent by Mr. E. Slater, with large flowers: the prominent markings on the labellum are maroon. All the drawings are semi-diagrammatic, made from labella flattened out.

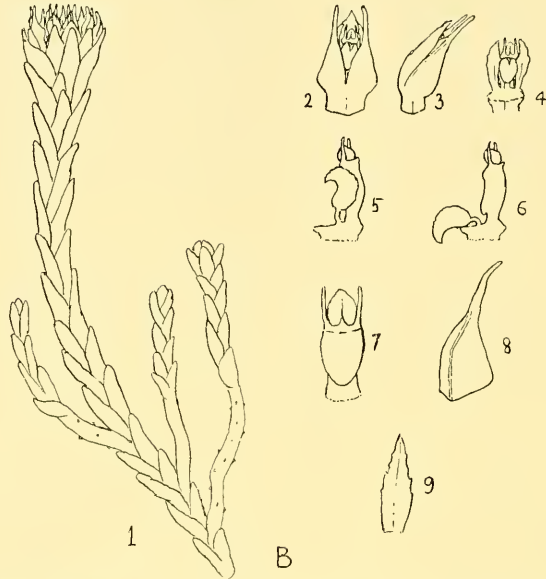
B. *Cryptanthemis Slateri* Rupp.

Reference to the description of this genus and species in These PROCEEDINGS, lvii, Parts 1–2, 1932, will remind readers that the original specimens were found late in November, when all the flowers were more or less withered and shrivelled. Though it was possible to soften a few of them sufficiently to identify the different parts, I suggested that the description then given would probably require to be supplemented when fresh specimens, at a less advanced stage of development, should be discovered. I had hoped to visit Bullahdelah, the scene of the original discovery, in the spring of 1932, with a view to examining plants *in situ*, but was unable to do so. Early in October, however, Mr. Slater sent me further specimens from Bullahdelah. Unfortunately they were somewhat damaged *en route*, and as I was away from home when they arrived, they were immersed in water until my return; this freshened them up, but did some injury to the minute and delicate details of the flowers. In view of the fact that these specimens were six weeks earlier than those of 1931, it was disappointing to find that of the four capitula sent, three had only flowers well past maturity. The fourth, however—a slender one with few flowers—was in good condition and the flowers had not withered. It was at once evident that the figures accompanying the original description, drawn from withered flowers "restored" as accurately as circumstances permitted, did not adequately represent living flowers.

The living flower of *Cryptanthemis*, in fact, bears far more resemblance to that of the Western Australian *Rhizanthella* than is apparent in withered specimens. In the latter the segments have the appearance of being membranous and flaccid, inclined to diverge from one another. In the living state the whole flower is very succulent, and the segments are thick and set very closely together in an erect position. The paired sepals in particular are rigidly erect, with their narrow and prolonged anterior portions inclined at an angle towards the centre of the capitulum. These anterior portions, though relatively slender, can scarcely be termed "filiform". At their bases the paired sepals are gibbous, but as the flower withers and the ovary enlarges, this feature is lost. Reference to figure 5 in the original description will show the "median line" of these sepals to be not truly median, but slightly to one side. This is correct, though in the figure cited the sepals are shown with their apices downwards, which is never the case in the living flower. Text-figure B, 8 shows the real character of this "median" line, which forms a ridge along the exterior convex surface of the sepal. If a

cross-section of the latter be taken, it has the form of two sides of a scalene triangle, the ridge being the apex.

Viewed from the front of the flower, these rigidly erect paired sepals, concave within, form with the dorsal sepal a kind of box protecting the petals, labellum, and column. The margins of the petals are very irregularly denticulate. In the



Text-fig. B.—Outline sketches of *Cryptanthemis Slateri*, Oct., 1932. 1. A plant with three branches, the main rhizome having a capitulum of living flowers; 2. flower from front; 3. flower from the side; 4. flower from the front with sepals removed; 5. labellum and column from the side; 6. effect of pushing labellum away from column; 7. column from the front; 8. dorsal view of one of the paired sepals; 9. a petal (2 to 9 variously enlarged).

text-figures of the original description the segments and other parts of the individual flower are shaded dark; but the living flower (except for a brownish patch on the back of the column which is not a constant feature) is almost wholly white, nor could I see any tendency to discoloration after exposure to light, such as Dr. Rogers records of *Rhizanthella*.

The labellum is larger than it appeared to be in the 1931 withered flowers, but is still relatively smaller than that of *Rhizanthella*. Its whole surface is glandular-rough, and I think (it is difficult to be sure) that the apparent minute denticulation of the margins is really due to this glandular roughness of the surface. The claw or stalklet attaching the labellum to the column-foot, in all the living flowers examined, appeared to me to have lost its power to function—probably by the prolonged immersion in water related above. In each case the labellum was erect with its ventral surface against the front of the column (Text-fig. B, 5), but directly it was pushed away it fell down on the floor of its "box" (Text-fig. B, 6), the claw being apparently unable to support it. In undamaged flowers it seems probable that the labellum is normally held in a horizontal attitude with its apex projecting between the paired sepals.

The column is short and stout, with a relatively large stigmatic plate. Examination of its details in these water-soaked specimens was difficult, especially as they reached me during a temporary sojourn on the inland plains of New South Wales, where I had few facilities for such work. As far as I could judge, the two columnar appendages mentioned in the original description are analogous to the "horns" on the front corners of the column-wings in some species of *Pterostylis*: they appear to rise from the rostellum, and are straight, or only very slightly curved. In the outer flowers of the capitulum the anthers had disappeared, and there were traces of pollinia on the stigmatic plates.

Much yet remains to be learnt about this remarkable plant, and it is most desirable that search should be made for it wherever *Dipodium punctatum*, the "associate" of *Cryptanthemis*, is known to occur. In this paper I have confined myself chiefly to correcting and amplifying the original description as far as is possible at present. I may add here, that notwithstanding the compact and almost tubular appearance of the living flower, and the "dovetailing" of the sepals to form a sheltered chamber for the inner parts, there can be no doubt that the sepals and petals are free.

There appears to be remarkable variation in the form of the plant itself. Of the nine specimens received since the first discovery, three were less than two inches long, but thick and compact. The others were elongated and slender. One of the 1932 specimens had three branches, the lower portions of these being without bracts.

C. *New Records of New South Wales Orchids.*

1. *Caleana Nublingii* Nicholls.—Described by Mr. W. H. Nicholls (*Vict. Nat.*, May, 1931), but not hitherto recorded in any New South Wales publication. Discovered by Mr. E. Nubling at Bell, in the Blue Mountains, 27th December, 1930. Near *C. minor* R.Br., but differs in its blunt, pear-shaped labellum and other details.

2. *Caladenia alpina* Rogers.—Specimens in the National Herbarium, Sydney, collected by the late Mr. R. H. Cambage at Queanbeyan, and labelled *C. carnea*, undoubtedly belong to this species. Previously only recorded for New South Wales by Mr. G. V. Scammell at Kosciusko.

3. *Corysanthes unguiculata* R.Br.—Brunswick Heads, Aug., 1932, Mr. F. Fordham. A very interesting record, extending the known range of this species northward by 350 miles.

4. *Thelymitra aristata* Lindl.—Brunswick Heads, Sept., 1932, Mr. F. Fordham. Growing among dense masses of *Dendrobium Kingianum*. Mr. Fordham supposed it to be *T. longifolia*, but though even smaller than the Keilor (Vic.) *T. aristata*, it seems to me undoubtedly that species. The column-hood is yellow in front, dark behind, with a broad V-notch; the buds expand readily, and the perfume is strong. It is surprising to find *T. aristata* associated with a *Dendrobium* on our far North Coast. I was rather struck by the superficial resemblance of the living specimen to *D. Kingianum* itself. The slender stem was curved; the colour and perfume of the flowers were not unlike, and the dimensions about equal.

5. *Lyperanthus ellipticus* R.Br.—Peat's Ridge, Mangrove Mountain, early 1932, Mr. H. Chapman. I do not know if this species has previously been recorded on the northern side of the Hawkesbury River, but it is generally supposed not to extend in that direction, and a definite record is therefore of value.

6. *Diuris palachila* Rogers.—Molong District, Sept., 1932 (W. H. Blakeley). Mr. Blakeley's specimens agree well with the South Australian type form.

7. *Pterostylis Baptistii* Fitzg.—Mrs. C. A. Messmer has found this species at Lake Tabourie, south of Milton, thus extending its range well to the south of Jervis Bay. She has also recorded there *Caladenia carnea* R.Br. var. *gigantea* Rogers; but though this is the most southerly record for New South Wales, the variety has been identified (1932) at Airey's Inlet, on the Victorian coast between Port Phillip and Cape Otway.

Varietal Descriptions.

In order to comply with the international rules of nomenclature, the following Latin descriptions of named varieties described in These PROCEEDINGS are supplied:

DENDROBIUM SPECIOSUM var. GRACILLIMUM (Vol. liv, part 5, 1929).—Scapi gracillimi, 22–40 cm. alti. Folia 8–16 cm. longa, non rigida, multo curva. Racemi 10–25 cm. Flores parvi cum segmentis brevibus.

PTEROSTYLIS OPHIOGLOSSA var. COLLINA (Vol. liv, part 5, 1929).—Flos parvus, pars superior fuscioruber. Galea breve acuta. Sepala lateralia brevia. Labellum multo curvum.

PTEROSTYLIS ACUMINATA var. INGENS (Vol. liii, part 5, 1928).—Planta robusta. Flos quam forma typica semper major.

PTEROSTYLIS PUSILLA var. PROMINENS (Vol. lvi, part 2, 1931).—Magnopere a forma typica differt. Planta 10–30 cm. alta. Flores nutantes, saepe numerosi, fusciorubri, a scapo prominentes.

CALADENIA DILATATA var. CONCINNA (Vol. liii, part 5, 1928).—Planta parva. Floris segmenta omnia brevia, prope aequalia, acuminata. Labelli apex brevissimus, margines posteriores dentati.